



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston – Northeast Regional Office

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May 19, 2003

Stefan Taschner, Chairman
Board of Water Commissioners
Lynnfield Center Water District
83 Phillips Road
Lynnfield, MA 01940

Re: Water Management Permit Review Permit 9P2-3-17-164.01

Dear Mr. Taschner:

The Department of Environmental Protection (the "Department" or "DEP") has completed its review of all the water withdrawal permits issued in the Ipswich River Basin including the Permit issued to the Lynnfield Center Water District (the "District"), Permit 9P2-3-17-164.01 (the "Permit"). The Permit, as issued in 1996, authorized the District to withdraw from its new groundwater sources, the Glen Drive Wellfield, located in the Ipswich River Basin. The permit did not authorize additional volumes beyond the 0.32 million gallons per day (MGD) previously registered in the North Coastal Basin and 0.29 MGD previously registered in the Ipswich River Basin to the District.

In 1998, the District withdrew from the Ipswich River Basin an average of approximately 133,600 gallons per day more than is authorized by the Permit and Registration. In 1999, the District withdrew from the Ipswich River Basin an average of 166,900 gallons per day more than is authorized by the Permit and Registration. The District did not apply for nor obtain a Water Withdrawal Permit that would authorize additional withdrawal volumes and therefore violated the Water Management Act, G.L.c. 21G. sec 7 and the Water Management Act Regulations, 310 CMR 36.17.

The Department and the District agreed to enter into an Administrative Consent Order, ACO-NE-2000-F003, which set forth deadlines constituting reasonable time for the District to come into compliance with the Water Management Act and the Water Management Act Regulations. The District complied with the terms and conditions of the Administrative Consent Order and complied with the Water Management Act and Water Management Act Regulations beginning calendar year 2000.

This information is available in alternate format. Call Aprel McCabe, ADA Coordinator at 1-617-556-1171.

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Lynnfield Center Water District

When the Permit was issued in 1996, the Department intended to require the permit holders in the Ipswich River Basin to file for a permit review in 1999. The Department delayed that requirement until the United States Geological Survey (USGS) had completed its studies of streamflow and habitat in the Ipswich River. After these studies were nearly complete, on December 13, 2002, the Department issued an Order to Complete requiring the District to submit additional information. The District responded to the Order to Complete on March 14, 2003. The Department has reviewed the information from the USGS studies along with the District's response to the Order to Complete and has issued the Modified Permit (enclosed herein) that reflects a balance between the public's need for a safe and reliable source of drinking water and competing environmental, economic and recreational interests.

As a result of this review, the Department has determined that there is documented evidence that water withdrawals, and to a lesser extent an increase of impervious area and development, along with the export of wastewater to other basins substantially contribute to low flow in the Ipswich River. These low flows significantly impair the ability of the river to function as a habitat for aquatic life and wildlife that are adapted to riverine conditions, an area for primary and secondary contact recreation and a reliable source of safe drinking water.

The Department has further determined that unless and until conditions in the Ipswich River significantly improve, it is unlikely that any permittees in the Ipswich River Basin will be approved to increase their authorized withdrawals. In these circumstances, it is essential that all permittees keep their withdrawals at or below their authorized volumes. Consistent with this purpose, the Modified Permit provides that if for any year beginning 2004, the District exceeds its authorized volume in the Ipswich River Basin, the District shall implement a water bank that provides for conserving at least two gallons of water for every additional gallon of water demand.

Requirements applicable to permittees that withdraw water from the Ipswich River Basin for water supply purposes

To reduce the adverse impacts on the ability of the Ipswich River to sustain all its uses, the Department has established the following performance standards for permittees that withdraw water from the Ipswich River Basin for water supply purposes:

1. Residential per capita water use of 65 gallons per day or less;
2. Unaccounted for water of 10% or less; and
3. A summer withdrawal cap based on minimizing the difference between summer (May through September) and winter (January through March and November through December) withdrawals derived from each community's summer to winter withdrawal ratio.

The standards set forth above shall herein be referred to collectively as the "Ipswich river Basin Performance Standards".

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The standards of 65 gallons per day or less for residential per capita water use and 10% or less for unaccounted for water are taken from the Water Resources Commission performance standards for effective water conservation for public water suppliers. While these performance standards represent the minimum standards required for compliance with the Modified Permit, the Department believes that through the implementation of all the terms and conditions of the Modified Permit, the Town can exceed the performance standards for residential per capita water use and unaccounted for water. The Department will review the Drinking Water Program's Annual Statistical Report when evaluating compliance with these performance standards. The reporting requirements added in the Modified Permit are intended to standardize the information submitted to the Department to assess compliance with the Modified Permit and the Ipswich River Basin Performance Standards.

Since streamflow is particularly stressed during the low flow summer period, the summer withdrawal cap specifically targets conservation when water demands are high and streamflow is low. The summer withdrawal cap is intended to reduce the difference between summer and winter water use. Based on the four-year period 1999 through 2002, communities with an average summer to winter withdrawal ratio of 1.4 or greater are required to reduce the summer - winter difference in withdrawal volumes by 50% in 2004. Communities with an average summer to winter withdrawal ratio that is less than 1.4 are required to reduce the summer -winter difference by 25% in 2004. The median of the four year summer to winter withdrawal ratio for all public water supply withdrawals in the Ipswich River Basin is 1.4. Reductions in the summer-winter difference are based on the year, within the four year period from 1999 thru 2002, when seasonal water use was highest.

The District's summer to winter ratio during the four year period 1999 thru 2002 is 1.74. The District's highest summer water use occurred in 1999. The Department has therefore determined that the District must decrease the difference between its 1999 summer and winter water use by 50%. Consistent with this approach, the Department has determined that the summer withdrawal cap for the District is 114.75 million gallons. To keep within this cap, the District is required to limit its seasonal water use to an average of 0.75 MGD over the summer period, May 1st thru September 30th. By implementing restrictions on outdoor water use, the District limited summer water use to an average daily volume of 0.76 MGD during the five month summer season in 2000.

To assist permittees in complying with the Ipswich Basin Performance Standards for residential per capita use and seasonal water use and to improve streamflows so that the Ipswich River can once again function as a viable habitat for aquatic life adapted to riverine conditions, the Department has required the following restrictions on nonessential outside water use:

1. All permittees withdrawing water from the Ipswich River Basin for public water supply purposes shall institute voluntary restrictions on nonessential outside water use whenever streamflow in the Ipswich River falls below 0.56 cubic feet per square mile ("cfs/m") for three consecutive days in the period from May 1st thru September 30th. The

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streamflow threshold of 0.56 cfs is based on wetted perimeter flow for a natural site in the Ipswich River as determined by the USGS habitat assessment study. A fully wetted channel bed in riffles is an index of the carrying capacity of a stream that is proportional to fish-food producing areas.

2. All permittees withdrawing water from the Ipswich Basin for public water supply purposes shall implement and enforce mandatory restrictions on nonessential outside water use whenever streamflow falls below 0.42 cfs for three consecutive days in the period from May 1st through September 30th. Based on evaluation of streamflow requirements, USGS determined that 0.42 cfs is a reasonable target for habitat protection necessary to support aquatic life adapted to riverine conditions. At a minimum, mandatory restrictions on nonessential outside water use shall include restrictions requiring hand held hoses only and limiting the hours for outside watering to exclude 9 a.m. to 5 p.m. when evapotranspiration is typically highest. Notwithstanding the foregoing, irrigation of public parks and recreational fields by means of automatic sprinklers equipped with moisture sensors or similar control technology may also be permitted outside of the hours 9 a.m. to 5 p.m. Enforcement of mandatory restrictions shall include the assessment of penalties or the imposition of fines for violations.

A notice of the voluntary and mandatory restrictions shall be published in the local newspaper. When streamflow is greater than the thresholds set forth above for a period of seven consecutive days, the corresponding level of restriction may be lifted.

The restrictions set forth above apply to nonessential outside water use. The term "nonessential outside water use" includes uses that do not have health or safety impacts, are not required by regulation and are not needed to meet the core functions of a business or other organization. Examples of nonessential outside water uses shall include: irrigation of lawns and ornamental plants; washing of vehicles unless necessary for operator safety subject to the exceptions set forth below; washing of building exteriors, outside structures, streets, sidewalks, and parking lots with the exceptions set forth below; the filling of swimming pools and hot tubs, and the operation of decorative pools and fountains. Examples of essential outside water uses may include outdoor water use for the production of food and fiber and the maintenance of livestock and poultry; outdoor water use by nurseries to maintain their stock; the watering of golf course greens; the washing of vehicles by commercial car washes, maintenance facilities, and dealers; and the washing of exterior building surfaces including windows, parking lots, driveways or sidewalks, prior to application of paint, preservatives, or stucco or for the preparation of the surface prior to paving or repointing of bricks, or if required for health and safety regulations.

To enable the District to comply with the Ipswich Basin Performance Standards for residential per capita use and seasonal water use, the Modified Permit requires the District to develop and implement an enhanced water conservation plan in the event that any year beginning with calendar year 2004, the District is not in compliance with these Performance Standard. In light of these provisions, the Department intends to review at least annually the progress that each permittee has made in meeting the Ipswich River Basin Performance Standards and in complying

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with the requirements of the Modified Permit. Moreover, the Department will take whatever action it deems appropriate to bring water suppliers into compliance with the modified permits and the Ipswich River Basin Performance Standards, including without limitation requiring more stringent restrictions on nonessential outside water use, further modifying the permits in the Ipswich Basin, and/or initiating enforcement actions with or without the assessment of civil administrative penalties. That being said, the Department remains committed to working with the District and all the Ipswich permittees so that the Ipswich River may once again sustain all its uses as a habitat for aquatic life and wildlife that are adapted to riverine conditions, a place for secondary and primary contact recreation and a reliable source of safe drinking water.

Proactive Actions by the Lynnfield Center Water District and the Town of Lynnfield

The Department wishes to commend the District and the Town of Lynnfield for taking a number of steps aimed at ensuring that the District has a safe and reliable source of drinking water both now and in the future. In particular, the Department commends the District for its best efforts to date to protect the drinking water supplies listed both in this permit and throughout the District. Department records show that the Town of Lynnfield has enacted land use controls and water supply protection measures that comply with the requirements of 310 CMR 22.21(2). The District, in letters dated March 14, 2003, requested the City of Peabody and the Town of North Reading to adopt similar land use controls to protect the portions of the Zone II of the Glen Drive Wellfield located in the respective communities.

The Department noted during this permit review process that the District has initiated investigation of additional sources of water supply within the North Coastal Basin to meet expected future water demands.

In discussions regarding the optimization of existing water supply sources, the Department noted that the District is scheduled to conduct a cost benefit analysis for the continued use and treatment of Phillips Road Well # 26 due to recent water quality changes resulting in increased backwash frequency at the Phillips Road Station # 3.

Procedure for appeal

The District has the right to appeal the Modified Permit in accordance with 310 CMR 36.40. Any such appeal must be received by the Department within twenty-one days of the date of receipt of the Modified Permit. Only the portions of the Modified Permit which reflect a modification of the District's current permit may be the subject of an appeal, since the period for appealing provisions within the District's current permit has expired.

If you have any questions regarding this permit, please contact Kellie O'Keefe at (978) 661-7765. Please note that the Northeast Regional Office of DEP will be moving in mid to late June to One Winter Street in Boston; Please check our website www.state.ma.us/dep/nero for latest updates.

Stefan Taschner,
Lynnfield Center Water District

Very truly yours,

Madelyn Morris
Deputy Regional Director
Bureau of Resource Protection

CC: Duane LeVangie, WMA Boston
Robert Whalen, Chairman, Town Hall 55 Summer St., Lynnfield, MA 01940
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